



## TECHNICAL ARCHITECTURE REVIEW

<b>Project Name:</b>	<b>Podcasting</b>
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<b>ARB Acceptance Date:</b>	
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### Background

The use of Podcasting is growing throughout all levels of government as agencies find new uses for this technology. Most state governments now feature podcasts prominently on their state portals. Wikipedia defines podcast as:

*... a digital media file, or a related collection of such files, which is distributed over the Internet using syndication feeds for playback on portable media players and personal computers. The term, like "radio," can refer either to the content itself or to the method by which it is syndicated; the latter is also termed podcasting.<sup>1</sup>*

Podcasting started to become popular toward the end of 2004. Although the word "podcasting" has its origins in the iPod portable media device, Wikipedia reports that 80% of podcasts are consumed on the PC and not downloaded. Webcontent.gov<sup>2</sup> identifies the following reasons why podcasting is important for government:

- Web users are finding podcasts (as well as [RSS feeds](#)) to be a very efficient method of keeping up with current news that interests them.
- A recent [report from the Pew Internet and American Life Project](#) (1996) shows that more than 22 million American adults own iPods or MP3 players and 29% of them have downloaded podcasts from the Web so that they could listen to audio files at a time of their choosing. That amounts to more than 6 million adults who have tried this new feature.

- More and more [government agencies](#) are using podcasts as a quick and easy way to distribute audio as an addition to existing text (or mostly text) news products, especially to visitors that frequently use podcasting software.
- It's another way to increase awareness of government information.
- Adopting new communication channels leads to better communication with the public.
- The process for developing a podcast is relatively simple and inexpensive.

### Objectives and Scope of Review

The purpose of this review is to analyze the need for podcasting services and make recommendations for technical architecture that may be needed to support these services. The State Library would like to use podcasts to expand the geographic area that can receive its current radio-based programming. Other agencies are beginning to develop interest in podcasting, but State-based services are limited and some agencies are reluctant to utilize externally-hosted solutions.

### Baseline of Current Architecture

The current inventory of Utah podcasts is spotty and inconsistent in the way content is presented. Current Podcast Applications in Utah government and education include:

- UEN Podcasts—<http://www.uen.org/podcast/>
- Arts Conference—  
[http://arts.utah.gov/experience\\_arts/podcasts/video\\_tracks/2007\\_MWCA/2007\\_MWCA.html](http://arts.utah.gov/experience_arts/podcasts/video_tracks/2007_MWCA/2007_MWCA.html)
- Workforce Services
- GOED—<http://goed.utah.gov/newsroom/podcasts.html>
- Healthcare—<http://utahealthnet.org/rss/>
- BioBits—<http://learn.genetics.utah.edu/podcasts/>
- Utah Science Center—  
<http://www.utahsciencecenter.org/podcasts/podcast.xml>
- Extension Service—  
<http://extension.usu.edu/htm/publications/by=type/type=8>
- Utah Storytelling (Arts Council) —  
[http://arts.utah.gov/experience\\_arts/podcasts/audio\\_tracks/Storytelling/Utah\\_Storytelling.html](http://arts.utah.gov/experience_arts/podcasts/audio_tracks/Storytelling/Utah_Storytelling.html)
- Access Utah Home and Gardening—<http://www.upr.org/homegarden.html>
- The State Legislature makes committee hearings and general session debates available in streaming audio and/or video, but does not publish them as podcasts
- The Utah Board of Education makes a Web cast available of its monthly meeting.

## Best Practices Review

After introducing her weekly podcast in 2005, Governor Granholm of Michigan said, "Podcasting is growing in popularity among young adults and this is a way to engage young people's interest in the information that ultimately could affect their world."

### Uses of podcasts in government:

- Alabama—Video messages from the governor; Alabama Arts Radio Series
- Alaska—Alaska National Guard Family Radio Program
- Arizona—Library Online Radio Show; Arts News; Hot Topics
- Arkansas—Regional Promotional Videos ("Arkansas Podcast"); Science Reports
- California—Governor's Weekly Message; Senate Podcast; Energy News; State Librarian Web cast; Museum Information; California Arts; Climate Change
- Colorado—Libraries; Education; Talking Book Library Podcast; Legislative Blue Book (current ballot issues)
- Connecticut—DMV (Driving Tips, Teenage Driving); Public Policy Podcast; Capitol Report
- Delaware—History; Energy Tips; State of the Arts
- Florida—Environmental Health; TOEFL
- Georgia—National Guard Weekly Briefing; Developmental Disabilities Training
- Hawaii—Sounds of Science<sup>3</sup>
- Idaho—Bear Lake Library<sup>4</sup>; Teens and Technology<sup>5</sup>; Idaho Public TV<sup>6</sup>
- Illinois—Department of Natural Resources Education<sup>7</sup>; Governor's Podcasts<sup>8</sup>; Outdoor Illinois<sup>9</sup>; Illinois State Historical Markers<sup>10</sup>
- Indiana—Education<sup>11</sup>; Investment Watch<sup>12</sup>; House of Representatives<sup>13</sup>
- Iowa—Department of Education<sup>14</sup>
- Kansas—Historical Society Cool Things Podcast<sup>15</sup>; Governor<sup>16</sup>
- Kentucky—Kentucky Tonight<sup>17</sup>; Governor<sup>18</sup>

The federal government provides numerous podcasts at [http://www.usa.gov/Topics/Reference\\_Shelf/Libraries/Podcasts.shtml](http://www.usa.gov/Topics/Reference_Shelf/Libraries/Podcasts.shtml). These can be categorized into several categories:

- Ongoing public dialogue and discussions.
- Static content that is available in RSS format, for example: Medicare and You 2007<sup>19</sup>—Manual is available in audio by chapter from HHS.
- Government advisories and warnings, for example: Weather and climate podcasts.

- Agency news.
- Human interest stories.
- Consumer tips.
- Training.
- Speeches, events, and interviews, for example: President's Weekly Radio Address<sup>20</sup>.
- Archived historical content.
- Photos, art, and other visual content.
- Travel shows, for example: National Park Service<sup>21</sup>.
- Policy dissemination, for example, the Department of State Policy Podcast<sup>22</sup>.

### Emerging Technologies and Trends

In March 2006, Forrester Research showed that only one percent of Internet users regularly listened to podcasts. Ten months later, that number had increased to 10%. The research shows that podcast listeners are generally younger, but that they are also technology influencers, both of which imply that this is an area that will continue to grow.

**Figure 3 Podcast Listeners Are Technology Influencers**

	More than weekly	At least weekly	Monthly	All podcast listeners
Percent of podcast listeners	26%	48%	26%	100%
"I often tell my friends about products that interest me."	61%	57%	57%	58%
"I rely a lot on recommendations from my friends and family when making purchases."	39%	37%	36%	37%
"People come to me for advice on technology."	49%	45%	34%	43%
Age	38	39	41	39
Percent male	62%	60%	59%	60%
Technology optimists	88%	75%	80%	80%
Online tenure	7.1	7.3	7.2	7.2
Mean income*	\$77,800	\$80,700	\$81,000	\$80,000

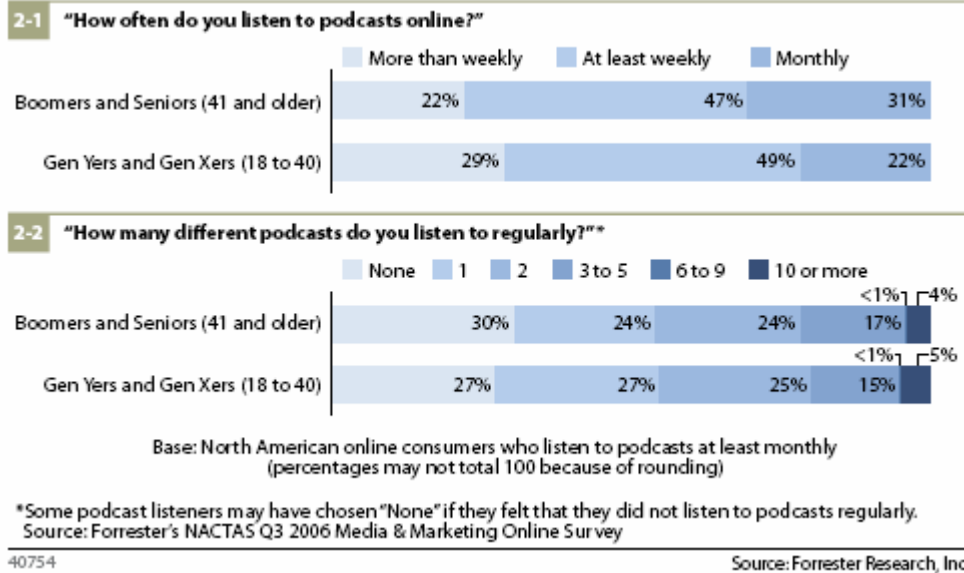
Base: North American online consumers who listen to podcasts at least monthly

\*Base: US online consumers who listen to podcasts at least monthly

Source: Forrester's NACTAS Q3 2006 Media & Marketing Online Survey

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Source: Forrester Research, Inc.



As software providers continue to add features to audio and video production tools, new opportunities will emerge for the use of podcasting in government. For example, text-to-voice converters combined with podcasting could mean that any text could become a podcast candidate. Newsletters could also be presented as podcasts that can be tagged for specific content. Consumers could then consume that content through a custom podcast during their drive home or during an exercise session. Other tools enable the podcast creator to create a podcast by phone or e-mail.

Another use of podcasts that is becoming popular is for the sharing of public meeting audio and/or video content. Consumers are able to review details of a public meeting at their leisure and quickly access the portions that they are most interested in. One blogger describes what he calls "Skypecasting"<sup>23</sup> where he uses Skype to capture teleconferences and quickly publish them to the Web for shared use.

## Industry Products

### Recording Software

- Audacity<sup>24</sup>—<http://audacity.sourceforge.net/>
- CastBlaster—<http://castblaster.com/>
- ClickCaster—[www.clickcaster.com](http://www.clickcaster.com)
- Gabcast—<http://www.gabcast.com/>
- Hipcast.com—<http://www.hipcast.com/>
- LAME—<http://lame.sourceforge.net/index.php>
- Mixcraft—<http://www.acoustica.com/mixcraft/index.htm>
- Pinnacle Podcast Factor—<http://www.podifier.com/>
- PodOmatic—<http://www.podomatic.com/>

- RecordForAll—<http://www.recordforall.com/>
- Soni Media Sound Forge and Acid Music Studio—<http://www.sonymediasoftware.com/products/soundforgefamily.asp>
- Text Aloud—<http://www.nextup.com/TextAloud/index.html>

#### Podcast Hosting Sites

- ClickCaster—[www.clickcaster.com](http://www.clickcaster.com)
- GCast—[www.gcast.com](http://www.gcast.com)
- Hipcast.com—<http://www.hipcast.com/>
- iTunes—<http://www.apple.com/itunes/store/podcaststechspecs.html>
- Liberated Syndication—<http://www.libsyn.com/>
- Ourmedia—<http://ourmedia.org>
- Podcast Alley—[http://www.podcastalley.com/add\\_a\\_podcast.php](http://www.podcastalley.com/add_a_podcast.php)
- PodOmatic—<http://www.podomatic.com/>
- Pod Show—<http://www.podshow.com/upload/>
- Viddler (video) —<http://www.viddler.com>

#### RSS Feed Support

- Feedburner—[www.feedburner.com](http://www.feedburner.com)
- Podbasket—<http://www.podbasket.com/>
- Poderator—<http://poderator.com/>

#### Financial Analysis

Software to create and publish podcasts and related multimedia content can be obtained at little to no cost. Third party hosting (although there may be issues with this) can also be obtained at almost no cost. For these reasons, the revenue opportunities for DTS are probably not significant.

#### Security Review and Analysis

Most of the content that is delivered through podcast and multimedia channels does not have related security and privacy concerns. In some cases, it may be in the State's interest to protect copyright or restrict the ability of the consumer to change or alter the content. Normal procedures for ensuring the integrity of Web-delivered content apply.

#### Operational and Infrastructure Analysis

The growth in audio and video content being supplied by State agency podcasts has some implications for network and storage infrastructure. To date, growth has been relatively slow, so the impact has been minimal.

## Solution Delivery Impact and Analysis

New podcasting solutions provide the opportunity to improve the way services are delivered, as well as ways that podcasts can be integrated through mashups with other technology-based services.

DTS currently has one FTE dedicated primarily to the creation and production of video content. Although much of this content is part of a series, it is not generally produced or delivered in podcast format (i.e., no RSS feed). Currently, these products are divided into three areas: Web casts, streaming video, and flash presentations. Most of the content is published using Real Server 9.0.

### DTS Produced Video:

- NUI User Group Meetings
- GOED Business Network Presentations
- DWS Staff Meetings
- UDDC Presentations
- DEQ Presentations
- DTS Training

## Summary and Recommendations

Interest in government podcasts will likely continue to grow at least through 2010, both by State agencies interested in developing new types of content, as well as by consumers of that content. New tools are being developed that increase the value of podcasts as a source of information.

The Department of Technology Services could add value in the following ways:

- Provide secure, reliable, and low-cost hosting of agency podcasts.
- Provide tools and training for self-serve podcast development services.
- Upgrade existing professional multimedia content development services.
- Develop standards for podcast presentation and work with agencies to define policy for podcast content.
- Provide taxonomies and methodologies for internal tagging of multimedia content.
- Enhance access to agency content through coordination and marketing.
- Work with agencies to identify areas where podcasting could add value to the mission and service provided by the agency.

The Department of Community and Culture could begin immediately making their radio broadcasts for the blind available in a podcast format using software that is freely available through the following steps:

1. Capture the existing broadcasts using Audacity or another comparable software tool and export to MP3 format.

2. Port the MP3 files to a Web server.
3. Create an RSS feed that catalogs the individual recordings and makes them available in a reusable XML format. (see <http://www.usa.gov/webcontent/technology/podcasting.shtml>)
4. Provide a link from the Library Web site to the new feed.

The Library should make sure that providing feeds of media content in this way does not violate the copyright laws associated with this content. Some of this content may already be available from the original providers in an audio format.

## References

Podcasting Resources for Libraries, Colorado Department of Education  
<http://www.cde.state.co.us/cdelib/technology/podcasting.htm>

## Endnotes

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- <sup>1</sup> Definition from Wikipedia: Podcast, <http://en.wikipedia.org/wiki/Podcasting>
  - <sup>2</sup> <http://www.usa.gov/webcontent/technology/podcasting.shtml>
  - <sup>3</sup> <http://media.nap.edu/podcasts/>
  - <sup>4</sup> Bear Lake Library, <http://bearlake.lili.org/node/206>
  - <sup>5</sup> Idaho State Library, <http://www.libraries.idaho.gov/teens-and-tech>
  - <sup>6</sup> Idaho Public TV, <http://idahoptv.org/dialogue4kids/audiovideo.cfm>
  - <sup>7</sup> Illinois Department of Natural Resources, <http://www.dnr.state.il.us/lands/education/podcasts.htm>
  - <sup>8</sup> <http://www.dnr.state.il.us/lands/education/podcasts.htm>
  - <sup>9</sup> <http://dnr.state.il.us/Podcasts/>
  - <sup>10</sup> [http://www.shs.springfield.k12.il.us/academics/departments/gis/Illinois\\_Markers/index.html](http://www.shs.springfield.k12.il.us/academics/departments/gis/Illinois_Markers/index.html)
  - <sup>11</sup> Indiana Department of Education, <http://www.doe.state.in.us/media/podcast/welcome.html>
  - <sup>12</sup> Securities Division, <http://www.in.gov/sos/securities/investmentwatch/podcast.html>
  - <sup>13</sup> Indiana House of Representatives, [http://www.in.gov/legislative/house\\_republicans/podcast/](http://www.in.gov/legislative/house_republicans/podcast/)
  - <sup>14</sup> Iowa Dept. of Education, <http://www.iowa.gov/educate/content/blogcategory/639/1151/>
  - <sup>15</sup> Kansas Historical Society, <http://www.kshs.org/audiotours/coolthings/index.htm>
  - <sup>16</sup> Kansas Governor, <http://www.governor.ks.gov/news/media.htm>
  - <sup>17</sup> Kentucky Tonight, <http://www.ket.org/cgi-bin/rss.pl?pid=3>
  - <sup>18</sup> <http://kentucky.gov/NR/rdonlyres/1BC444C6-D125-4915-AD8E-DDBE55E09AE7/0/govcast.xml>
  - <sup>19</sup> <http://www.medicare.gov/podcasts/mandy/podcast.xml>
  - <sup>20</sup> <http://www.whitehouse.gov/rss/radioaddress.xml>
  - <sup>21</sup> [http://digg.com/podcasts/National\\_Park\\_Service](http://digg.com/podcasts/National_Park_Service)
  - <sup>22</sup> [http://public-xml.feedroom.com/public\\_rss/state\\_podcast\\_rss.xml?channel\\_id=548856746eef7b142cac100c5aa54bb6f55a3a5&format=video](http://public-xml.feedroom.com/public_rss/state_podcast_rss.xml?channel_id=548856746eef7b142cac100c5aa54bb6f55a3a5&format=video)
  - <sup>23</sup> <http://www.henshall.com/blog/archives/001056.html>
  - <sup>24</sup> Freeware recording software recommended by Webcontent.gov